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NOTES AND BRIEF ARTICLES

[*Unsigned notes are by the editor*]

Readers of MYCOLOGIA are invited to contribute to this department personal news items and notes or brief articles of interest to mycologists in general. Manuscript should be submitted before the middle of the month preceding the month in which this publication is issued.

Dr. Carl Hartley, formerly pathologist in the Office of Forest Pathology Investigations, Bureau of Plant Industry, has resigned to take a position in the Institute for Plant Diseases at Buitenzorg, Java.

Dr. W. H. Rankin, for five years assistant professor of plant pathology in the New York State College of Agriculture at Cornell University, has been appointed officer-in-charge, Field Laboratory of Plant Pathology, St. Catharines, Ontario, in the Canadian Department of Agriculture.

Mr. Emery D. Eddy, who has been engaged during the past year in the investigation of diseases of market vegetables for the Department of Agriculture, recently resigned his position to take up commercial work.

Professor Guy West Wilson has returned to the department of biology in Upper Iowa University, Fayette, Iowa. While at Clemson College in South Carolina, he collected a number of interesting fungi, an account of which will soon appear in MYCOLOGIA.

Oak mildew, according to Poeteren, may be effectively checked for an entire season by a single application of lime-sulphur spray, if used when the mildew begins to develop vigorously.

A new and effective disinfectant for pear blight is said by Reimer to be a 10 per cent. solution of commercial formaldehyde in water, which should be applied to all tools used and all wounds made in connection with blight work in pear orchards.

Silver leaf of fruit trees, especially injurious to choice varieties of the plum, has become a serious scourge in some parts of England. The only remedy seems to be the speedy and thorough removal of all affected trees or parts of trees, as is done in the case of pear blight.

Fomes lucidus is parasitic on a number of trees in Barbados, according to Nowell, including lime trees, *Pithecolobium saman, P. unguis-cati, Caesalpinia coriaria,* and species of *Acacia,* the trunks of which are usually attacked at the center.

Whitten has found that winter injury to the buds of fruit trees in Missouri, where they are liable to develop too early and be killed by the frost, may frequently be prevented by spraying with whitewash, which reflects the heat of the sun and thus retards development. Anything that will maintain late growth in the fall will also tend to delay the flowering period the following spring.

Snapdragon rust, according to Peltier, has been in California since 1879 and in Illinois since 1913. It can not be controlled by Bordeaux or similar fungicides, but the conditions under which snapdragon plants are grown must be carefully watched. Watering the plants from below checks the ready dissemination and germination of the spores, while propagation from seed would probably prevent the disease entirely, since the rust spores are not carried on the seed of the snapdragon.

Patouillard, the famous French mycologist, has observed *Ustulina vulgaris* to be the cause of a fatal disease of the linden. The fungus attacks the trunk at the surface of the ground, spreads over it for a foot or more, penetrates the sapwood and heartwood, and kills the tree apparently by parasitic action.

A disease of the walnut tree in France is said by Paravicini to be due to the attacks of *Favolus europaeus*, one of the common polypores ordinarily considered non-parasitic. According to this investigator, the fungus enters the trunk through wounds and is frequently found associated with other fungi.

Professor E. T. Bartholomew, of the Department of Botany of the University of Wisconsin, has accepted a research professorship in the Graduate School of Tropical Agriculture at Riverside, California, in connection with the University of California. His special work will be the investigation of the diseases of lemons and other citrus fruits.

Professor H. M. Fitzpatrick, of Cornell University, has made arrangements to teach in the summer school of the University of Michigan. He has just completed a monograph of the Coryneliaceae, which will appear in part in the July number of *Mycologia*.

Tyrosin in the fungi is discussed by C. W. Dodge in the *Annals of the Missouri Botanical Garden* (**6**: 71–92. 1919). He investigated the chemistry of the tyrosinase reaction in certain species that turn blue or black on exposure to the air, and found: "(1) that the tyrosinase reaction is not a deamination, although it is possible that deaminases may exist in the same organism with tyrosinase; (2) that the tyrosin molecule is synthesized into a larger, more complex molecule, in which part of the carboxyl groups is either split off as carbon dioxide, or more probably bound in the molecule so that it will not react with alkali."

"Études sur la biologie et la culture des champignons supérieurs" is the title of a paper of 116 pages and many illustrations published by Monsieur G. Boyer at Bordeaux in 1918. Cultures from spores were usually unsatisfactory, so he was forced to use portions of the hymenophore. The best medium seemed to be a decoction from carrots solidified with gelose. Mycelium obtained from spores of *Morchella* was vigorous, but no fruit-bodies were formed, probably owing to the necessity of a mycorhizal host previous to ascocarp formation. He found that saprophytic fungi grew readily on culture media, but this was not true of mycorhizal forms associated with certain trees in a symbiotic relationship.

An illustrated article by Hartley and Hahn on the diseases of the quaking aspen, probably the most widely distributed tree of our American forests, appeared in *Phytopathology* for March, 1920. After a discussion of fungi attacking the leaves, twigs, and trunk, the authors conclude with the following summary: "Observations have shown quaking aspen in certain areas to be unusually subject to disease; trunk cankers of unknown origin seem to be especially important factors in shortening the life of the trees. *Fomes igniarius* is also an important factor in causing premature death of aspen in the Pike's Peak region. Interesting but less important diseases are (1) a twig blight suggesting in appearance the fire blight of pear; (2) a leaf disease due to *Sclerotium bifrons*, E. & E., distributed from the Rocky Mountains to New England and also attacking Lombardy poplar but not *Populus grandidentata;* and (3) a rapidly spreading bark trouble which kills cuttings."

A widespread leaf-spot disease of the German Iris caused by *Heterosporium gracile*, or *Didymellina Iridis*, is discussed at length by W. B. Tisdale in *Phytopathology* for March, 1920. This disease seems to occur wherever the susceptible, broad-leaved species of Iris are grown, having been reported from Wisconsin, New York, California, England, and elsewhere. The fungus overwinters in the mycelial stage in the dead leaves. Perithecia develop early in the spring, but do not always produce asci, apparently on account of the weather conditions. Sterile perithecia bear conidia on the apex. An abundant crop of conidia, always present early in the spring, serves as the chief source of primary infection. The only mode of penetration found during the experimental work at Madison was through the stomata. The removal of dead infected leaves before the young leaves appear in the spring promises to be a successful means of control.

"Short Cycle Uromyces of North America" is the title of an illustrated paper by G. R. Bisby in the *Botanical Gazette* for March, 1920. The characters, relationships, life history, cytology, hosts, taxonomy, and bibilography of this group of rusts are discussed in a rather comprehensive way. No new species are described. The following conclusions are drawn: "Eleven species of *Uromyces* possessing only telia and pycnia, or telia alone, are now considered to be present in North America. These are found especially in the higher and warmer portions of the continent, and occur upon seven widely separated host families. While these rusts form a group agreeing as to life cycle and as to the 1-celled character of the teliospores, it is not considered that phylogenetic interrelationship is thereby shown, morphological evidence indicating rather that the relationship of a species of these rusts is found in other rusts (of various life cycles and with 1- or 2-celled teliospores) upon the same or related hosts. Indeed, as indicated under *Uromyces heterodermus,* a group of hosts may bear a number of rusts of various life cycles, belonging to *Puccinia* and *Uromyces,* widely distributed geographically, yet all showing a certain unanimity of morphological characters, especially in the telial stage."

"Dothidiaceous and Other Porto Rican Fungi," by F. L. Stevens, with 2 plates and 3 figures in the text, appeared in the *Botanical Gazette* for March, 1920. One new genus, *Halstedia,* and the following fifteen new species were described: *Uleodothis Pteridis, Dothidella portoricensis, D. flava, Catacauma Ocoteae, C. palmicola, C. Gouaniae, Phaedothopsis Eupatorii, Halstedia portoricensis, Dimerina monenses, Gloniella rubra, Guignardia Justiciae, G. Tetrazygiae, G. Nectandrae, Zignoella algaphila,* and *Phyllosticta bonduc.*

At a recent meeting of the Botanical Society of America at St. Louis, a request was presented to the Council of the Society for the establishment of a Mycological Section. The form of this request was as follows:

"We, the undersigned members of the Botanical Society, consider it highly desirable and necessary, for the better promotion of mycological research and the more efficient presentation of papers on fungi, that a separate section be established and a segregated program be given at our annual meetings.

"Therefore, we ask the Council of the Botanical Society to institute at this time a new section, to be called the Mycological Section, to include papers on fungi in all phases, in so far as these do not conflict with the interests of the American Phytopathological Society."

The Council granted the request and, at the instance of Secretary Schramm, a meeting of the signers of the memorandum was called and Dr. C. H. Kauffman was elected chairman of the new Section.

PIER ANDREA SACCARDO

Professor Saccardo, so well known to mycologists, died at Padua, Italy, February 12, 1920. Born at Treviso, April 23, 1845, he was assistant in the Botanical Institute of the University of Padua, 1866–72; professor of natural history in the Technical Institute at Padua, 1869–79; became professor of botany and director of the botanic garden of the University of Padua in 1880; and retired in later years as professor *emeritus*. For a list of his publications, see Lindau & Sydow's "Thesaurus."

The writer has visited him at Padua and also at Selva, where one of his summer homes was located, and always found him busy with plans regarding his "Sylloge." Shortly before his death, he sent in a paper for publication in *Mycologia*, which will appear in the next number. The passing of Saccardo adds another distinguished name to the heavy toll of mycologists taken during the past few years.

W. A. MURRILL

A MYCOLOGIST IN THE MAKING

An excellent collection of Ohio fungi was recently sent to me for determination by Mr. W. R. Lowater, a beginner in this field, and the letter accompanying it is so good that I will quote a few paragraphs from it to encourage other beginners:

"For a person like myself, without even a common school education, to attempt unaided the collection of the fungous flora of a certain locality, must seem to a person like yourself as rank impertinence, or at best unwarranted presumption. But I beg of you to suspend judgment. This is not the first great task I have undertaken, nor by any means the greatest. Against all handicaps, I have pitted my usual persistence and self-reliance, supplemented by a love for the chosen task; and, if the progress I have made in the last two years is any criterion of future advancement, you will have little cause ever to feel ashamed of your protégé,—if I may so call myself.

"Furthermore, the university student has the advantages of botanical libraries, lectures, technical instruction, herbaria, and scientific apparatus, while I have had none of these, and have had to grope my way. Only recently have I been placed in a position to buy literature on the subject, and I am slowly acquiring such apparatus as my limited means will allow.

"All that I desire is a start. Should you feel constrained to say, 'Don't! The task is too great for you—you are not qualified for it,' I will only the more solicit your patience. Should the bungling descriptions I have prepared grate on your 'scientific' nerves, I hope that a consideration of the conditions under which I have worked will prevent you from treating the entire matter with levity."

Everyone must bow, sooner or later, to determination and devotion; and mycology needs earnest workers in all sections of the country. Specimens well collected and preserved are always valuable, whether the collector has studied Latin or not.

W. A. MURRILL

KAUFFMAN'S AGARICACEAE

"The Agaricaceae of Michigan," by Dr. C. H. Kauffman, which appeared in 1919, is a stupendous piece of work splendidly done. No one who has not tried something of the kind can realize what such an undertaking means. The detailed descriptions of fresh specimens as they accumulated during the years; their determination from scattered types and inadequate literature; the photographs and drawings; the careful microscopic work; the serious questions relative to poisonous species;—all these and more have been the task of Dr. Kauffman.

The volume of text contains 924 pages, most of which are required for the descriptions of the 884 species listed for Michigan. The introductory remarks include discussions regarding the structure, habit of growth, distribution, collection, and classification of the gill-fungi; while the volume closes with a glossary and bibliography by the author and a lengthy paper by Dr. O. E. Fischer on mushroom poisoning. The second volume consists of 162 full-size plates illustrating in black and white a total of 185 species, many of which have not been illustrated elsewhere.

The new species published in this work, not to mention the new varieties, are thirty in number, a list of which follows. They are to be credited to Dr. Kauffman unless otherwise indicated:

Russula ochraleucoides, R. subpunctata, R. amygdaloides, Hypholoma peckianum, Psilocybe larga, Cortinarius iodeoides, C. velicopia, C. rubens, C. elegantioides, C. aggregatus, C. sphaerosperma, C. purpureophyllus, C. virentophyllus, C. subpulchrifolius, C. subtabularis, C. mammosus, C. impolitus, C. subrigens, Inocybe lanotodisca, I. glaber, Hebeloma simile, Galera bulbifera, G. cyanopes, Crepidotus stipitatus, Eccilia pirinoides, Amanita chrysoblema Atk., *Lepiota fischeri, Pleurotus albolanatus* Pk., *Tricholoma laticeps,* and *Clitocybe praecox.*

W. A. MURRILL

Phytopathology for January, 1920, contains an article on Dr. Farlow, by G. P. Clinton; one on the potato mosaic disease, by H. M. Quanjer; and abstracts of the phytopathological papers presented at the recent meeting in St. Louis.

In reporting on the potato wart survey for 1919, Dr. Lyman states that the disease was found in small amounts in six villages in western Pennsylvania and in two villages in northern West Virginia, all being in the soft-coal section, except one of the West Virginia localites. Apparently no other extensive area of infestation exists at all comparable to the Hazleton district, but undoubtedly there are other undiscovered isolated points of infestation in regions out of touch with modern agriculturists. These can be brought to light only by further intensive survey.

"Wood-destroying fungi in pulp and paper mill roofs" was the title of a paper presented by Mr. R. J. Blair, which was abstracted as follows: When the roof of a paper mill is built of wood moisture in the air permits the development of wood-destroying fungi in the timber. Rapid rotting takes place and it is often necessary to renew the timber after six or eight years' service. The roofs of eighty of the Canadian paper mills have been examined to find the different types of construction used and the services secured from each. The common faults in every case are that moisture enters the spaces between the planks and reaches their upper side, where it condenses, causing a moist condition of the planks during prolonged periods and at the same time the wood is of a non-durable species. There is no evidence that other species of fungi than three of those mentioned last year in connection with the cotton mill roofs, *Lentodium tigrinum, Lenzites trabea,* and *Poria xantha,* cause these losses. The remedy for such timber decay lies in a combination of four factors, which need consideration when the roof is being built. These are the use of wood which resists decay, ventilation which carries away the moisture, liberal dry-air heating, and a heat-insulating layer placed on the upper side of the planks.

Dr. J. C. Arthur reported that there were two destructive rusts ready to invade the United States at the first opportunity. A rust on peanuts has long been prevalent in South America. In Trinidad and the nearby islands of the Antilles it is a great menace to the crop, often covering every leaf on the plants with a heavy powder of urediniospores. No successful method of controlling the rust has yet been found. A rust on potatoes and tomatoes, comparable in its life history and behavior with the hollyhock rust, has recently come to light in Costa Rica and Ecuador. The possibilities for its spread and harmfulness deserve serious attention. Neither this rust nor the preceding one has yet been reported from any United States possession.

The biology of *Fomes applanatus* is ably and comprehensively treated by J. H. White in the *Transactions of the Royal Canadian Institute* **12**: 133–174. *pl. 2–7.* 1919. Two of the most important results obtained relate to the discharge of spores and to the parasitic nature of the fungus. These are summarized by the author as follows:

"Spore discharge is enormous and continues for by far the longest period recorded for fungi. It is continuous day and night for about six months—visible from vigorous fruiting bodies as spore clouds. Buller, from a count estimate in the case of *Polyporus squamosus,* a form which also exhibits spore clouds, concluded that at least 1,700,000 spores were discharged from one tube in three days. A similar calculation with *F. applanatus* gave the incomprehensible number of 30,000 million spores liberated in twenty-four hours from a fruiting body with a pore surface of about one square foot. Discharge is not affected by variations in light, humidity of the air, or temperature within very wide limits; frost causes an instant cessation and thereafter there is no further spore fall until a new set of pores is organized.

"*Fomes applanatus* has been proved to be a wound parasite, and in southern Ontario at least one of the commonest and most destructive of this type. The proof rests on three grounds: (*a*) the conventional test applied to other such fungi—the mycelium works upward most readily by the way of the heartwood, causing a characteristic decay and outward into the sapwood, eventually reaching the cambium, and is apparently the cause of the death of the tissues traversed by it; (*b*) a broad brown band is present in the wood of living trees along the advance line of the invading mycelium of this fungus. Within this band there is a copious production of brown wound gum and an excessive multiplication of tyloses. This band steadily moves forward with the advancing hyphae, the tyloses and wound gum being destroyed by the mycelium along its posterior margin as rapidly as they are formed along its anterior edge. The tyloses (and possible the wound gum also) certify to the living condition of the invaded tissues;

their production can be ascribed only to the influence of the fungus, and the invasion of these tissues and their fate demonstrates directly its ability to act as a parasite; (*c*) inoculations with the spores and mycelium of *F. applanatus* into living trees resulted in an extensive browning of the inoculated wood with a multiplication of tyloses—both far in excess of similar phenomena due to traumatic stimulation."

OUDEMANS' WORK ON FUNGI

The first volume of Oudemans' "Enumeratio Systematica Fungorum," with about 1,360 pages of text, appeared in the latter part of 1919. It contains a bibliography of 2,107 titles and a host index of all the cryptogams and the monocotyledons (as far as the orchids) that occur in Europe, either wild or in cultivation, with the fungi that are parasitic upon them. Engler's nomenclature has been followed in the main for the higher plants and Saccardo's for the fungi.

Oudemans died in 1906, having labored twenty-five years or more on this work. Dr. Lotsy succeeded in getting a Society at Haarlem to publish the manuscript, after it was revised and completed up to the year 1910 by de Boer, Paerels, and Vuyck. The first volume may be obtained for fifteen dollars from Martinus Nijhoff, Lange Voorhout 9, The Hague, Holland. The remaining four volumes are expected to appear in a few years.

This first volume is valuable because of its extended bibliography and the numerous citations to the literature of the fungi which it contains. As a host index for the fungi, it includes all European plants, many of which occur in this country, and also all plants grown in conservatories in Europe, among which will be found many species from tropical America.

W. A. MURRILL

ERRORS IN LINDAU'S "THESAURUS" AND SACCARDO'S "SYLLOGE"

Several years ago I sent in some corrections for Lindau and Sydow's Thesaurus litteraturae mycologicae . . .; a few more have come to my attention which I think may possibly be of interest to the readers of MYCOLOGIA.

In Lindau and Sydow's Thesaurus litteraturae mycologicae . . . under J. A. Mougeot (no. 77) occurs the title: Champignons des Vosges (Statist. du Départ. des Vosges, Epinal 1845, 127 p.); the same title is also given under A. Mougeot, by Traverso in his Supplementum alterum to Saccardo's Bibliotheca mycologicae . . . in the Sylloge fungorum, v. 17, p. lxxii. I have not been able to locate this work but I feel reasonably sure that it is wrongly credited to J. A. Mougeot. There seems to have been considerable confusion of the father (Jean Baptiste) and the son (Joseph Antoine or Antoine, as he is more often) given) by bibliographers. A notable example is that of the Royal Society's Catalogue of scientific papers, 1st series, which, however, corrected the mistake in the supplementary volume. There is no mention of any such work by J. A. Mougeot by his biographers; in fact it would not seem that his published mycological work dates so far back. It is most probably a reprint from J. B. Mougeot's Considérations générales sur la végétation spontanée du département des Vosges. This was first published in the Ann. Soc. Emul. Dép. Vosges in 1834 (Lindau no. 73), but according to Kirschleger in his Flore d'Alsace, v. 2, p. lxx–lxxi, included only the phanerogams; in 1845 it was reprinted with the addition of the cryptogams, in Lepage and Charton's Statistique du Département des Vosges (Lindau, no. 73a, the date 1835 must be a typographical error). An examination of a copy of the reprint of the Considérations générales . . . of 1845, discovers no indication that the son (J. A. Mougeot) had any hand in the work. The part dealing with fungi, both general text and the table of species, would cover about 127 p., which is given as the number of pages for the reprint "Champignons des Vosges."

Nos. 78 and 79, credited by Lindau to J. A. Mougeot, should also be transferred to J. B. Mougeot, the father.

I should be glad to get track of a copy of the "Champignons des Vosges," 1845, and would appreciate information in regard to its location.

It is very possible that the following note of correction for Saccardo's "Sylloge fungorum" has already been brought to the attention of mycologists; on the chance that it may have escaped notice I am appending it.

Saccardo in his "Sylloge fungorum," v. 2, p. 352, cites as synonyms of *Ophiobolus herpotrichus*

Rhaph. herpotriche (Fr.) Fuck. Symb. Myc. p. 125.
Rhaph. lacroixii Mont. Syll. Crypt. n. 895.

In the "Synonymia" (v. 15 of the "Sylloge," p. 320) the species are given as *Rhaphidophora herpotricha* and *R. lacroixii.* In both cases the name used by Fuckel and Montagne is *Rhaphidospora* and not *Rhaphidophora.* This error should also be corrected in the Index to the "Sylloge" (v. 12, p. 663): *Rhaphidophora* Fr. et Mont. should read *Rhaphidospora* Fr. et Mont.

It might also be well to call attention to the fact that the abbreviation "Car. et de Not." which occurs in a number of places, especially under *Ophiobolus* in v. 2 and in v. 15, p. 320, under *Rhaphidophora,* should read "Ces. et de Not."

ALICE C. ATWOOD